

REMARKS/ARGUMENTS

Drawings

The drawings have been supplemented by the attached new Figure 3, showing the missing features that were claimed.

Specification

The new abstract has been consolidated to comprise one paragraph only.

Claim rejections – 35 USC 112

In the new set of claims, claim 14 has been clarified by removing the feature “particularly beads” and transferring this feature into a new dependent claim depending on claim 15.

Claim rejections – 35 USC 102

Independent claim 1 distinguishes over Hanakawa in that it claims "an open cross-section with a base and two legs extending from said base; and the beam has at least one free area which is locally provided with a cast or sintered reinforcement structure made of the light metal"

To the contrary, Hanakawa teaches a closed profile that is filled partially with a filler material, wherein "the filler material is made of a porous material" (Compare for instance column 4, line 2) A filler material within a closed profile cannot be compared to a reinforcement structure for an open profile. The man skilled in the art distinguishes significantly between an open profile and a closed profile, since both have completely different properties when it comes to flexural rigidity and

torsional stiffness, let alone the fact that an open profile cannot be filled up with a porous material.

In particular, referring to column at 11, lines 11 to 17, the beam as disclosed in Hanakawa is made from a panel member Po formed in cross section into a U-shape and open on one side and a panel member Pi formed into a flat shape and combined together in a cantilever hat shape as shown in figure 7, and an overlapping portion Lf of the combined assembly was spot welded with 60 mm pitch, by which of the frame was finally assembled. This closed profile (welded) is shown in figure 7. This closed profile according to Hanakawa also fails to teach a base and two legs extending from said base as claimed in the claim 1, since a closed profile does not have a base and two legs. Put in other words, by definition of a closed profile, it cannot be defined what the legs and what the base are. As a further explained in column 11, lines 38 to 41 of Hanakawa referring to figures 6 and 7, part of the closed profile is full of filler material S that was filled in over the length Ef as already indicated above. This cannot be compared to a reinforcement structure provided on an open cross-section as claimed in claim 1.

Turning to Saeki, it fails to teach a profile of sheet steel that is reinforced by applying a reinforcement structure. In contrast to the invention, Saeki teaches a separate cast part having reinforcement ribs. It is well known the prior art to cast parts having ribs. Such cast parts can then for instance be welded to a profile or connected thereto in any other way. However, this does not teach the reinforcement structure that is cast or sintered to an oblong open profile that is made of sheet steel as claimed as the present invention.

Claim rejections – 35 USC 103

Further, the teachings of Hanakawa and Saeki cannot be combined in any useful manner by the man skilled in the art. While Hanakawa teaches only a closed profile, Saeki just teaches generally a cast part. The man skilled in the art would not have a motivation to substitute the filler material in Hanakawa by inserting a cast part taught by Saeki into the closed profile taught by Hanakawa. But even if he does, the result is still a closed Hanakawa profile combined with the Saeki cast part and not the present invention, namely an open profile of sheet metal is reinforced by a cast or sintered reinforcement structure.

The only reinforcement Hanakawa teaches is a filler material which works great for closed profiles, but provides no teaching for an open profile. Since the open profile does not have boundaries on all sides, even minor torsion or bending load would cause the filler material to detach from the steel sheet and would not provide any reinforcement properties after detachment, or even separate to the extent that it is dropping out of the sheet steel. In summary, Hanakawa does not teach how to reinforce an open profile at all.

A combination of Hanakawa and Saeki would not be considered by the man skilled in the art since it would not result in any useful product, let alone provide a teaching that results in the invention, namely to combine a sheet metal with a cast or sintered reinforcement structure, and how to achieve this goal.

Even though it might be known to weld a cast part to a profile, this does not teach to reinforce an oblong profile beam made of sheet steel with a reinforcement structure made of cast or sintered light metal. The result of a hypothetical Hanakawa-Saeki combination would just be combining two separate parts, one being an oblong closed beam, the other being a reinforced cast part made of light


metal. However, the man skilled in the art would not even consider combining both parts since the porous filler material in Hanakawa was filled in for the purpose of reinforcement, so that the man skilled in the art would not see a need to substitute the filler material by a cast part reinforcement structure, or to attach an additional cast part for the purpose of reinforcement. But even if the man skilled in the art attaches a cast part according to Saeki to the beam filled with filler material as taught by Hanakawa that does not result in a part as claimed in claim 1 of the present invention.

Dependent claims 2 to 18 claim advantageous embodiments of the invention in more detail. In a particular, these claims set forth the particular design of the reinforcement structures and the beam and are neither taken alone, nor in combination with the features of independent claim 1 obvious over prior art.

In view of the present amendments and arguments, the applicant believes that all claims are now in condition for allowance. Therefore, the applicant respectfully requests that a Notice of Allowance be issued in this case.

Respectfully submitted

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ANNOTATION SHEET

Replacement
sheet

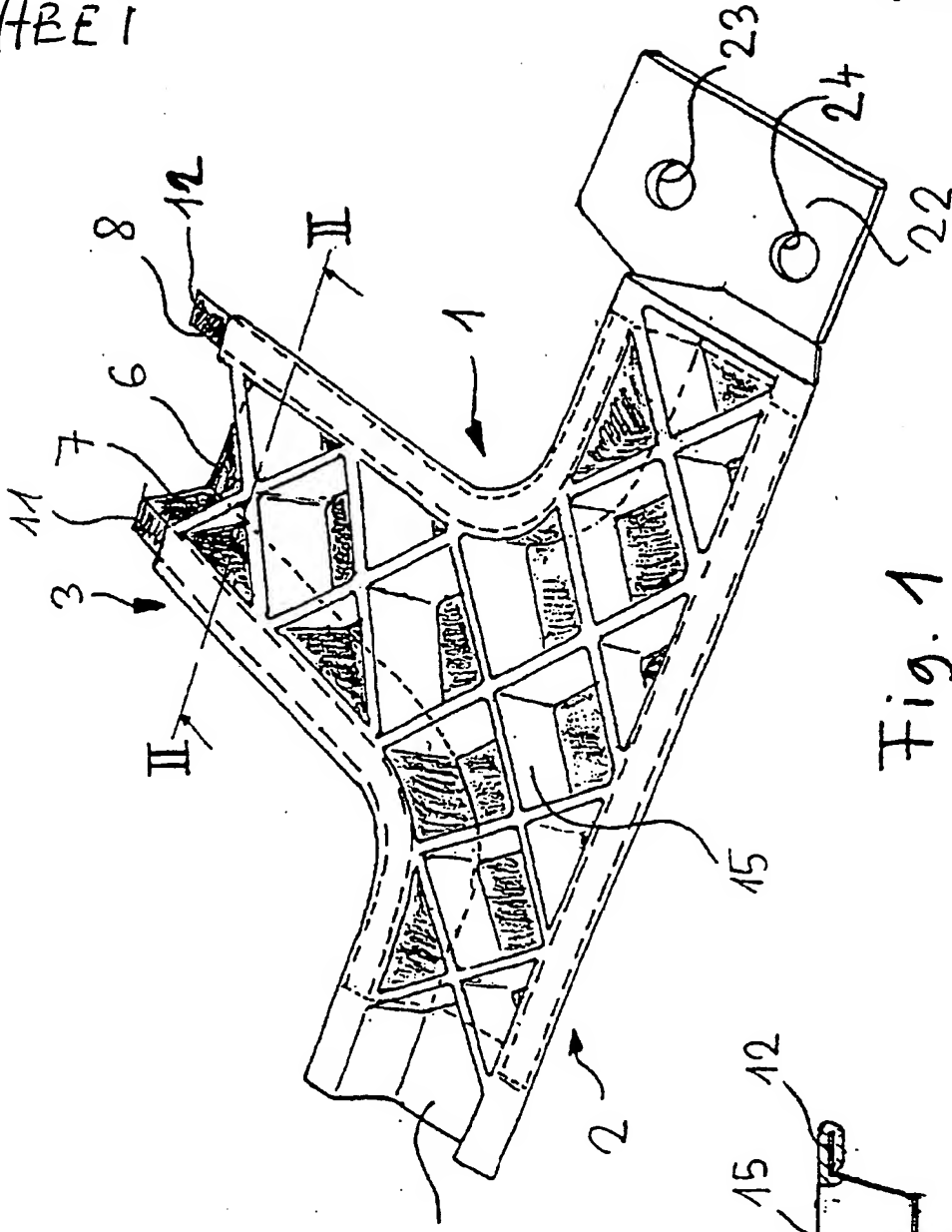


Fig. 1

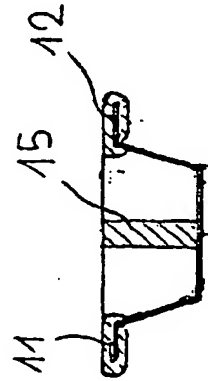


Fig. 2

FIGURE 3 WAS
ADDED

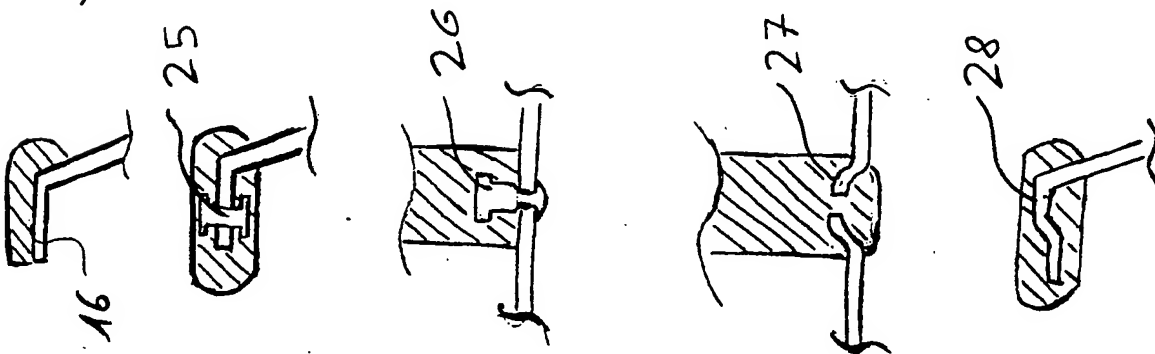


Fig. 3